

CLAIMS

[1] An information recording device for recording information on an information recording medium including a volume space for recording user data, a spare area containing a substitute area that can be used in place of a defective area contained in the volume space, and a defect management information area for recording defect management information used for managing the defective areas,

wherein the defect management information contains defect location information indicating the location of the defective area and defect status information indicating the attributes of the defective area, and

an initialization processing module is provided that, during physical reformatting of the information recording medium, maintains at least the defect location information portion of the defect management information and, on the other hand, overwrites the defect status information with attributes indicating that said defective area has been physically reformatted.

[2] The information recording device according to claim 1, wherein the defect management information further comprises substitute location information indicating the location of the substitute area, and

the initialization processing module erases the substitute location information portion of the defect management information during physical reformatting of the information recording medium.

[3] The information recording device according to claim 1, wherein the defect management information further comprises substitute location information indicating the location of the substitute area, and

the initialization processing module maintains the substitute location information portion of the defect management information during physical reformatting of the information recording medium.

- [4] The information recording device according to claim 1, further comprising a control module for performing at least one of recording processing and reproduction processing in an area indicated by defect location information corresponding to defect status information having the attributes and forming part of the defect management information based on the assumption that there are no significant user data.
- [5] The information recording device according to claim 4, wherein the control module performs recording processing of new user data in an area indicated by defect location information corresponding to defect status information having the attributes and forming part of the defect management information without reproducing data from said area.
- [6] The information recording device according to claim 4, wherein upon receipt of a reproduction instruction regarding areas indicated by defect location information corresponding to defect status information having the attributes and forming part of the defect management information, the control module, without reproducing data from said area, generates dummy data and uses the same instead of reproducing data from said area.
- [7] The information recording device according to claim 1, further comprising a control module for performing at least one of recording processing and reproduction processing in an area indicated by defect location information corresponding to defect status information having the attributes and forming part of the defect management information, based on an assumption that defects in said area may have been eliminated.
- [8] The information recording device according to claim 7, wherein the control module, after performing trial recording of data in an area indicated

by defect location information corresponding to defect status information having the attributes and forming part of the defect management information, invalidates the defect management information related to said area in case of success and allocates a substitute area to said area in case of failure.

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[9] The information recording device according to claim 1, wherein when user data are recorded in a defective area indicated by the defect location information forming part of the defect management information or when a substitute area is substituted for the defective area as a result of substitution processing, attributes indicating that the defective area has been physically reformatted are erased from the defect management information .
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[10] The information recording device according to claim 1, further comprising an inspection processing module for inspecting an area indicated by defect location information corresponding to defect management information having attributes indicating that physical reformatting has been performed while there are no operation instructions from a higher-level control device and invalidating said defect management information if defects in said area have been eliminated and allocating a substitute area to said 20 area if defects in said area are confirmed.

[11] A method for the physical reformatting processing of an information recording medium including a volume space for recording user data, a spare area containing a substitute area that can be used instead of a defective area 25 contained in the volume space, and a defect management information area for recording defect management information used for managing the defective area,

wherein the defect management information includes defect location information indicating the location of the defective area and defect status 30 information indicating the attributes of the defective area, and

along with maintaining at least the defect location information portion of the defect management information, the defect status information is overwritten with attributes indicating that said defective area has been physically reformatted.